

1 We claim:

1 1. A method to activate a code update for a data storage drive, comprising
2 the steps of:

3 receiving said code update at said data storage drive while said data storage drive
4 performs normal drive operations;

5 detecting a host computer transparent event;

6 activating said code update during said host computer transparent event.

1 2. The method of claim 1, wherein said host computer transparent event
2 comprises a data storage drive reset.

1 3. The method of claim 1, wherein said host computer transparent event
2 comprises a power cycle to said data storage drive.

1 4. The method of claim 1, further comprising the steps of:

2 receiving a host computer command;

3 determining if said host computer command is suitable for said host computer
4 transparent event;

5 operative if said host computer command is suitable for said host computer
6 transparent event, activating said code update; and

7 performing said host computer command.

1 5. The method of claim 1, wherein said data storage drive comprises an
2 identity, and wherein said data storage drive is disposed in a storage subsystem, further
3 comprising the steps of:

4 transferring said identify to a second component disposed in said storage
5 subsystem,
6 activating said code update;
7 returning said identity to said data storage drive from said second component.

1 6. The method of claim 5, wherein said second component is selected from
2 the group consisting of a second data storage drive, a subsystem controller, a host
3 component, an interconnect component, and combinations thereof.

1 7. The method of claim 1, wherein said data storage drive comprises a
2 memory device, further comprising the step of writing said code update to said memory
3 device while said data storage drive remains in normal operation.

1 8. The method of claim 1, wherein said data storage drive comprises a
2 memory device, further comprising the steps of:
3 generating drive status information;
4 writing said drive status information to said memory device while said data
5 storage drive remains in normal operation.

1 9. An article of manufacture comprising a computer useable medium having
2 computer readable program code disposed therein to activate a code update for a data
3 storage drive, the computer readable program code comprising a series of computer
4 readable program steps to effect:
5 receiving a code update while said data storage drive is operating;
6 detecting a host computer transparent event;
7 activating said code update during said host computer transparent event.

1 10. The article of manufacture of claim 9, wherein said host computer
2 transparent event comprises a data storage drive reset.

1 11. The article of manufacture of claim 9, wherein said host computer
2 transparent event comprises a power cycle to said data storage drive.

1 12. The article of manufacture of claim 9, said computer readable program
2 code further comprising a series of computer readable program steps to effect:

3 receiving a host computer command;

4 determining if said host computer command is suitable for said host computer
5 transparent event;

6 operative if said host computer command is suitable for said host computer
7 transparent event, activating said code update; and

8 performing said host computer command.

1 13. The article of manufacture of claim 9, wherein said data storage drive
2 comprises an identity, and wherein said data storage drive is disposed in a storage
3 subsystem, the computer readable program code comprising a series of computer
4 readable program steps to effect:

5 transferring said identify to a second component disposed in said storage
6 subsystem,

7 activating said code update;

8 returning said identity to said data storage drive from said second component.

1 14. The article of manufacture of claim 13, wherein said second component is
2 selected from the group consisting of a second data storage drive, a subsystem controller,
3 a host component, and interconnect component, and combinations thereof.

1 15. The article of manufacture of claim 9, wherein said data storage drive
2 comprises a memory device, the computer readable program code comprising a series of
3 computer readable program steps to effect writing said code update to said memory
4 device while said data storage drive remains in normal operation.

1 16. The article of manufacture of claim 9, wherein said data storage drive
2 comprises a memory device, the computer readable program code comprising a series of
3 computer readable program steps to effect:

4 generating drive status information;

5 writing said drive status information to said memory device while said data
6 storage drive remains in normal operation.

1 17. A computer program product usable with a programmable computer
2 processor having computer readable program code embodied therein to activate a code
3 update for a data storage drive, comprising:

4 computer readable program code which causes said programmable computer
5 processor to receive a code update while said data storage drive is operating;

6 computer readable program code which causes said programmable computer
7 processor to detect a host computer transparent event;

8 computer readable program code which causes said programmable computer
9 processor to activate said code update during said host computer transparent event.

1 18. The computer program product of claim 17, wherein said host computer
2 transparent event comprises a data storage drive reset.

1 19. The computer program product of claim 17, wherein said host computer
2 transparent event comprises a power cycle to said data storage drive.

1 20. The computer program product of claim 17, further comprising:
2 computer readable program code which causes said programmable computer
3 processor to receive a host computer command;
4 computer readable program code which causes said programmable computer
5 processor to determine if said host computer command is suitable for said host computer
6 transparent event;
7 computer readable program code which, if said computer command is suitable for
8 said host computer transparent event, causes said programmable computer processor to
9 activate said code update; and
10 computer readable program code which causes said programmable computer
11 processor to perform said host computer command.

1 21. The computer program product of claim 17, wherein said data storage
2 drive comprises an identity, and wherein said data storage drive is disposed in a storage
3 subsystem, further comprising:
4 computer readable program code which causes said programmable computer
5 processor to transfer said identify to a second component disposed in said storage
6 subsystem,

7 computer readable program code which causes said programmable computer
8 processor to activate said code update;
9 computer readable program code which causes said programmable computer
10 processor to receive said identity from said second component.

1 22. The computer program product of claim 21, wherein said second
2 component is selected from the group consisting of a second data storage drive, a
3 subsystem controller, a host component, and interconnect component, and combinations
4 thereof.

1 23. The computer program product of claim 17, wherein said data storage
2 drive comprises a memory device, further comprising computer readable program code
3 which causes said programmable computer processor to write said code update to said
4 memory device while said data storage drive remains in normal operation.

1 24. The computer program product of claim 17, wherein said data storage
2 drive comprises a memory device, further comprising:
3 computer readable program code which causes said programmable computer
4 processor to generate drive status information;
5 computer readable program code which causes said programmable computer
6 processor to write said drive status to said memory device while said data storage drive
7 remains in normal operation.